Growth and export status of Indian floriculture: A review

Debajit Misra¹ and Sudip Ghosh*

Department of Mechanical Engineering,
Indian Institute of Engineering Science and Technology, Shibpur-711 103, India.
Received: 27-03-2015 Accepted: 04-02-2016 DOI: 10.18805/ar.v37i1.9269

ABSTRACT
This paper aims at conducting a study on recent developments of floriculture industry in India, particularly in terms of production of cut flowers and the growth of the industry and its trade with the world. Primary focus is on the flowers (loose as well as cut flowers) that are grown commercially. Time series data covering a period of last two decades have been used for the study. The paper also reports on the global trade scenario for floricultural products, indicating the major trading countries and their trade. It is observed that during the period the production of both the loose and cut flowers have been growing at a Compound Annual Growth Rate (CAGR) of 9.92% and 26.66%, respectively. However, the first decade did not see substantial growth in export of floricultural products from India. During the last decade, export increased at a CAGR of 4.33%. India’s share of global floriculture trade at present is only about 0.6%.

Key words: Cut flower, Export potential, Floriculture, Global trade, Loose flower.

INTRODUCTION
Floriculture is the branch of horticulture that deals with the cultivation of flowering and ornamental plants for sales or for use as raw materials in cosmetic industry. Demands for floricultural products are steadily increasing both in the domestic as well as export markets. India has made significant improvement in the production of flowers, particularly cut flowers, which have good potential for export. Floriculture is important from the economic perspective as well. Commercial floriculture has been steadily increasing with increased use of protected cultivation employing greenhouse, shade nets, polyhouse etc. Commercial flowers cultivation in India provides an opportunity for rural development owing to its higher returns per unit area and the new employment opportunities. India has a scope to bridge the gap between demand and supply as global demand of floricultural products is growing at a faster rate. India is enriched with diverse agro-climatic conditions such as, fertile land, suitable climate, abundant water supply, low labour cost, availability of skilled manpower, etc. which are quite beneficial for growing a variety of flower plants throughout the year.

Data analysis strategy: The article has been made by collecting various information related to floriculture from books, internet sources, and relevant reports of various institutions and organizations. Information regarding quantity of production, area used for flower cultivation, state wise production, etc. have been collected from Indian Horticulture Database. Information regarding India’s international export of floricultural products in various years, foreign exchange through floriculture as well as role of the government for the development of floricultural industry have been gathered from Agricultural and Processed Food Products Export Development Authority (APEDA). Information related to global floriculture has been collected from the official website of The International Association of Horticultural Producers (AIPH). United Nations Commodity Trade Statistics Database has provided information of country wise global export as well as import of the floricultural products. In some cases, data related to production and trade has been analyzed by using Compound Annual Growth Rate (CAGR), equation for which is given as:

\[
CAGR = \left( \frac{\text{Final Value}}{\text{Initial Value}} \right)^{\frac{1}{n}} - 1
\]

Where
n is the number of periods (years).

International scenario: Globally more than 145 countries are involved in floriculture industry and the global floriculture trade is estimated to be at US$ 70 billion at present (ICAR Vision 2050). According to The International Association of Horticultural Producers (AIPH 2010), 702,383 ha area was under flower production in different countries of the world, of which the total area in Europe was 48,705 ha, North America was 21,067 ha, Asia was 523,829 ha, the middle East was 4,026, Africa was 7,604 ha, North America was 21,067 and central and South America was 97,152 ha. In that year, according to Indian Horticulture Database, India occupied a floriculture area of 183,000 ha, which was 26% of the global area.

The global floriculture industry is experiencing rapid changes due to globalization and its effect on financial

*Corresponding author’s e-mail: sudipghosh.becollege@gmail.com. ¹Department of Mechanical Engineering, Saroj Mohan Institute of Technology, Hooghly-712 512, India.
development in the different regions of the world. At the same time, competition is increasing worldwide. The Netherlands, USA, Columbia, Japan and Italy are well known as traditional growers of flowers. Some Asian countries like India, China, Bangladesh, Thailand, Vietnam, etc., are also steadily improving horticultural production. Also in Latin America and Africa, production is increasing very rapidly. Major flower consuming countries in the world concentrate in the Western Europe and North America. Germany, USA, UK, the Netherlands, France and Switzerland together consume around 80 percent of the total flower production [Global Horticulture (2014 -2018)]. Of the world’s ten largest domestic markets for cut flowers, six are in Europe, namely Germany, the UK, France, Italy, the Netherlands and Spain. Other important markets are the US and Japan, accounting for around 20 percent each. Recently, Russia and the Middle East have also become important markets demonstrating rapid market growth.

World floriculture trade is mostly depending on the trade of cut flowers and buds, cut foliage, potted plants and bedding plants. Main cut flowers in world trade are rose, chrysanthemum, carnation, gerbera, and lily.

Figure 1 shows the worldwide trade of the major countries in cut flowers and buds export. It is seen that the Netherlands is the world leader. Total world export of floriculture products stands at USD 9,784,525,000 and Netherlands claims 47.7% of total world exports. The other major countries are Colombia, Ecuador, Kenya, Ethiopia and Belgium. India is in 14th position in exporting floricultural products.

Figure 2 shows the major importing countries in the world in cut flowers and buds. It is clearly seen that Germany possesses leading position, UK and USA possessing second and third position respectively. Other European countries are the major destinations for cut flowers and buds export.

Indian scenario: India’s, commercial floriculture has gained momentum in the 1990’s. The development of Indian commercial floriculture has centered around the production of rose, marigold, gerbera, chrysanthemum, gladiolous, anthurium, carnation, orchid, tuberose, lilium, alstroemeria etc.

Figure 3 shows the area under production of floricultural crops from 1993-94 to 2013-14. Production area shows a continual increase since 1993-94. Only in the year 2002-03 the area under cultivation decreases. In India, during the year 1993-94, the area under flower cultivation was 53000 hectare and then area has been increasing with CAGR (Compounded Annual Growth Rate) of 7.76%. It is seen that the growth rate has drastically changed during the year 1995-96, 2003-04 and 2011-12.

Figure 4 shows the trend of both loose flowers and cut flowers production starting from the year 1993-94. It is evident from the figure that there is a gradual rise of flowers production in the following years. Loose flowers production almost keeps uniformity in its incremental rate.
It can be observed that cut flowers production slowly progresses up to the year 2006-07; thereafter its production tremendously rises at a CAGR of 40.5%. From the graph, it is clear that the cultivation of cut flowers is in the process of accelerating the floriculture development in India. Since at present cut flowers are highly demanding particularly for export purpose and India has been shifting from traditional flowers to cut flowers production.

**Export potential of Indian floricultural products:** Indian floricultural products have been attaining to the world floriculture trade by increasing the productivity. The Agricultural and Processed Food Products Export Development Authority (APEDA) manages for developing and promoting agri-exports including flowers.

Figure 5 shows India’s export of the floricultural products from 2000-01 to 2014-15. It can be observed that 2001-02 was the exceptional year. During that year India’s share to the global market was just 18,803.67 MT with an export value of 115.33 crores, afterward both quantity as well as value increases and reaches maximum position in the year 2006-07. India’s total export of floricultural products during that year was 42,545.29MT with an export value of 652.70 crores. It is also observed that from 2006-07 production quantity as well as value slowly decreases up to 2009-10. In the time periods 2009-10 to 2014-15 though the quantity of the total exported products varies slightly, export value has significantly increased. It has happened due to the increasing trend of global market price. Thus, India has an opportunity to increase the export potential by increasing the productivity of commercial flower.

Figure 6 shows the major countries, where India exports floricultural products, its quantity, and value. It is observed that the export to the different countries is quite uneven. In the year 2014-15 the floricultural products have been exported to 105 countries, of which 86.3% are exported to the 18 countries shown in the figure. It is clearly seen that the biggest export market is the USA importing 5490 MT quantity by 98.13 crores. The USA imports 23.9% of the total exported quantity followed by UK, Germany, the Netherlands, UAE, Canada, Japan, Australia, Italy and Singapore. These ten countries together import more than 70% of the total exported quantity. The Netherlands, which is known as the leading exporter in the world trade of flowers, also imports a large amount of floricultural products from India.

![Figure 4: Yearly production quantity of important Indian loose flowers (MT) and cut flowers (Million nos)](image)

Source: Indian Horticulture Database, 2008 and 2014

**CONCLUSION AND FUTURE PROSPECT**

It is concluded that production and trade of Indian floricultural products have been consistently increasing over the last decade. Though India dominates in terms of area under cultivation compared with some leading countries which are quite prosperous in floriculture like the Netherlands, Colombia, Ecuador and Belgium, India’s yield per hectare is low. As a result, India’s contribution to the global floricultural export market is very minimum. However, in order to become sustainable, new strategies should be followed, which can give fruitful results on long-term basis. Since worldwide floricultural trade and consumption are increasing rapidly, there is a still an opportunity to India in

![Figure 5: Export of the floricultural products from India in quantity (MT) and value (Crores)](image)

Source: APEDA 2000-01 to 2014-15

![Figure 6: Floricultural products export from India to major importing countries by quantity (MT) and value (Crores)](image)
achieving a consistent growth in production and export, thus earning valuable foreign exchange. Those matters are of paramount importance for development of floricultural industry in the country. The Government of India has initiated many developmental programmes mainly through the schemes of Ministry of Agriculture (National Horticulture Board, National Horticulture Mission, Horticulture Mission for North East & Himalayan States etc.) and Ministry of Commerce (APEDA). National Horticulture Board (NHB), National Horticulture Mission (NHM) and Rashtriya Krishi Vikas Yojana (RKVY) have created awareness regarding horticulture in rural areas. National Bank for Agricultural Rural Development (NABARD) is providing financial assistance to the farmer to adopt protected cultivation and precision farming. Research activities on floriculture are being carried out at several research institutions under the Indian Council of Agricultural Research (ICAR), Council of Scientific and Industrial Research (CSIR) and in the horticulture departments of state agriculture universities and under the All India Co-ordinated Floriculture Improvement Project. To meet the demand of flower seeds, several seed companies have developed production units in major flower growing states. India Government introduces various training related programmes for farmers and entrepreneurs. The Government offers a range of concession on seeds, planting materials, various types of equipment and airfreight for export. It is anticipated that improved policies would enhance floriculture in world trade.

REFERENCES